

Notice of Allowability

Application No.

10/019,082

Examiner

Stephen J. Stein

Applicant(s)

SCHMITT ET AL.

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicants' Amendment filed May 2nd, 2005.
2. ☒ The allowed claim(s) is/are 10-25.
3. ☒ The drawings filed on 28 January 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Stephen J. Stein
STEPHEN STEIN
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

IN THE SPECIFICATION

On page 1, after the title insert,

--This application is a 371 of PCT/US01/23587 filed August 02, 2001, which claims priority to US Provisional Application 60/222,876 filed August 3, 2000.

Allowable Subject Matter

2. Claims 10-25 are allowed over the prior art of record.

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance:

The primary reason for allowance is applicants' amendment which cancelled claims 1-8 and created new independent claim 10 which claims an epitaxial layer of $\text{Ba}_x\text{Sr}_{1-x}\text{TiO}_3$ formed on the *C-plane* of a sapphire substrate wherein x has value of from 0 to 1, and new independent claim 17 which now claims an epitaxial layer of $\text{Ba}_x\text{Sr}_{1-x}\text{TiO}_3$ on a sapphire substrate wherein x has value from 0.1 to 0.9. While the prior art of record does disclose certain epitaxial titanate layers on sapphire substrates, none of the prior art discloses the above epitaxial barium strontium titanate layers on a *C-plane* of a sapphire substrate or simply on a sapphire substrate and having a formula of $\text{Ba}_x\text{Sr}_{1-x}\text{TiO}_3$ wherein x has value from 0.1 to 0.9.

The following is summary of the closest prior art of record.

US 5,132,282 (Newman et al.) discloses an epitaxial strontium titanate that is formed on the r-plane of a sapphire substrate, but fails teach or suggest that the strontium titanate is grown on c-plane of a sapphire substrate as claimed in claim 10 and further fails to teach or suggest the specific mixed barium strontium titanate as claimed in claim 17.

Other prior art or record, such as US 5,572,052 (Kashihara) and US 6,376,090 (Kijima) both disclose PZT (lead zirconate titanate) epitaxially grown on sapphire substrates, but neither reference teaches or suggests an epitaxial strontium titanate grown on the c-plane of a sapphire substrate or the claimed epitaxial BST film grown on a sapphire substrate.

The prior art taken as whole fails to teach or suggest the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Stein whose telephone number is 571-272-1544. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m. If the attempts to reach the examiner are unsuccessful, the examiner's supervisor, Deborah Jones can be reached by dialing 571-272-1535. The official fax number is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 20, 2005



Stephen J. Stein
Primary Examiner
Art Unit 1775